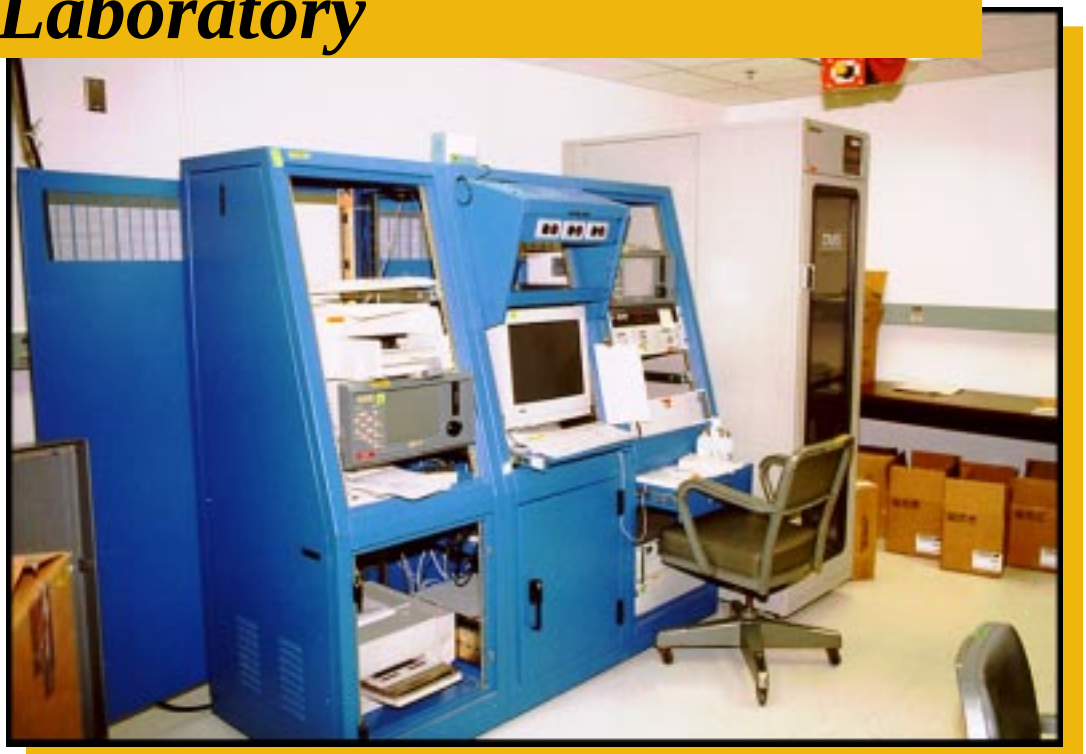
Tri-Service Magnetic Media Laboratory



The Tri-Service Magnetic Media Laboratory offers a broad spectrum of RDT&E capabilities to all DoD programs. The facility provides various levels of media testing for all phases of data storage media development, production and standardization studies. In addition, the laboratory performs environmental testing of recording media and hardware.

DoD Data Storage Media Laboratory

The Tri-Service Magnetic media Laboratory provides RDT&E support for Army, Airforce, Navy and NASA programs using analog and digital instrumentation and computer data recording techniques.

The DoD Magnetic Media Laboratory includes a 1000 sq-ft Class 100 Cleanroom used to test media performance in a dust free and temperature controlled environment. This capability is essential for performing characterizations of media from competing vendors and recording technologies.

Custom designed automated testing systems enable the laboratory to conduct performance tests and characterizations on all recording media types. The systems can perform simultaneous parametric time coherent measurements of all multitrack recording formats as function of recorded wavelength or time. Measurements can be performed on longitudinal and rotary tape recording formats including ID-1, VHS/SVHS, DCRSi and RDAT Systems.

The laboratory contains a Sony ID-1 recorder/reproducer jukebox system configured for 100% testing of D-1 tape for programs requiring media with a guaranteed level of performance. The system can be used for evaluating new tape or for media that is being evaluated for possible reuse. In addition, the lab has the capability of performing this function for longitudinal high density digital recording media.

Characterizations of both physical and material properties can be performed. The lab has equipment such as an X-Y-Z table, profilometer, laser micrometer and an optical microscope equipped with a video recorder. Fixtures exist to evaluate parameters such as tensile strength, coefficient of flexibility, adhesion, elongation, yield strength, shock strength, abraisivity and electrical resistance. Evaluation of these parameters is used to determine media durability, head wear and dimensional stability for all recording applications.

The laboratory conducts environmental tests to determine vibration and temperature/humidity characteristics of media and fleet hardware used for data storage and processing. The vibration shaker can handle hardware weighing up to 200 pounds. Small computer controlled temperature and humidity chambers can sustain low temperature, low humidity conditions and also high temperature, high humidity conditions. The lab has two 27 ft^3 computer controlled chambers with the unique capability of transitioning from high temperature and humidity to low temperature and humidity without going through the dew point.

This facility, in conjunction with the Recorder & Optical Disk Lab, performs the research necessary to generate meaningful military and commercial standards for the instrumentation recording industry. Automated testing allows for efficiently testing large statistical samples of media from various manufacturers to determine production centerlines.

For more information contact the Tri-Service Magnetic Media Laboratory at the Naval Air Warfare Center Aircraft Division, Patuxent River, MD at 301-342-9111.